B&R X20SLX910

01 Safety configuration

1 Inventory the safety node

Record the existing node assignment, safety application identity and connected openSAFETY participants. Count the distributed nodes and SafeMOTION axes before changing the station; a replacement cannot increase the configured capacity by itself.

2 Secure the guarded process

Place the affected machine in its approved maintenance state. Identify every protective device whose input reaches this module and ensure that removing an input cannot cause an unexpected restart or defeat a required protective function.

Safe digital inputs	20, type A sink
Pulse outputs	4 push-pull outputs

X20SLX910

02 Input circuits

1 Separate input and pulse conductors

Label each sensor return, input and test-pulse conductor at the terminal blocks. Preserve the pulse-source association used by the safety application; crossing pulse groups can change diagnostic behavior even when static input states appear correct.

2 Check the supply window

Verify the 24 V DC I/O supply against the -15%/+20% range and review the common reference arrangement. Investigate unstable supply voltage before assessing individual input channels or attempting to validate the safety response.

Nominal I/O supply	24 V DC, -15% / +20%
Input low threshold	<5 V

X20SLX910

03 Pulse testing

1 Review filter assignments

Retain the individual software-filter settings and include their delay in the overall response-time calculation. A longer filter can reject short disturbances but also delay recognition of a protective-device transition; do not alter it merely to suppress a fault.

2 Budget test-pulse loading

Account for all loads attached to each test-pulse output. Keep each channel within 50 mA and the four-output total within 200 mA, and use only input arrangements supported by the safety design.

Input high threshold	>15 V
Hardware input filter	150 µs maximum

X20SLX910

04 Functional validation

1 Restore keyed connections

Use the correct safety-keyed terminal blocks and bus module. Inspect seating and conductor retention, and compare the final terminal allocation with the retained circuit drawing before enabling the station.

2 Exercise protective devices

Test each connected guard or protective-device state through the approved validation procedure. Check the safety application's interpretation and the resulting output response, including detection of wiring faults required by the design.

Software input filter	0–500 ms
Pulse output current	50 mA per output; 200 mA total

X20SLX910

05 Release evidence

1 Observe communication recovery

Confirm that the intended openSAFETY participants return with the correct identities. Resolve missing nodes and inconsistent configuration before permitting production operation; a healthy bus indication alone is not a functional safety validation.

2 Release with validation evidence

Record the final application identity, filter settings and completed protective-function tests. Return the machine to operation only after the responsible safety process accepts the complete sensor-to-actuator behavior.

Technical basis: B&R SafeIO and SafeLOGIC Technical Data, version 3.5.0.

Related product navigation

B&R X20AP3131

B&R X20CP1484

These are related references, not confirmed substitutes or an automatically approved assembly.